

Research Article

Studying the Association between Thinking Styles and Creativity among Students

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Abstract

Background: Developing thinking skills has been receiving considerable attention in educational systems. Students are taught how to use the power of thinking to live a better life. Understanding and utilizing ways of thinking as a preferred approach of reasoning, assessment, and judgment in different aspects of life seem to be influential. This paper aims to study the relationship between viewpoints and creativity in students of Torbat Heydariyeh University of Medical Sciences in 2015.

Methods: Sternberg Wagner Thinking Styles Inventory and Abedi Creativity Questionnaire were used to collect the data among students. 13 styles of thinking were studied. Data was analyzed by SPSS20. $P < 0.05$ considered significant.

Findings: The mean score of students' creativity was 97.88 ± 19.17 . The highest (24.96 ± 2.43) and lowest (14.11 ± 1.16) mean score belonged to anarchic and legislative styles of thinking respectively. Our findings indicate that local ($r = -0.176$) and conservative ($r = -0.701$) forms of thinking are negatively related to creativity. In addition, legislative ($r = 0.512$), global ($r = 0.634$), liberal ($r = 0.653$), hierarchical ($r = 0.181$), anarchic ($r = 0.356$), internal ($r = 0.198$), and external ($r = 0.189$) styles of thinking were positively related to creativity. With respect to legislative ($r = 0.045$), judicial ($r = 0.23$), conservative ($r = 0.009$), and external ($r = 0.001$) styles, no significant difference was observed between male and female students.

Conclusion: It is imperative to pay considerable attention to thinking styles and their influence on students' creativity. As thinking styles are teachable, the hope is that those styles of thinking that create active learning and facilitate creativity in students be taught to learners and teachers.

Keywords: creativity, thinking styles, students

Introduction

Every year a group of students are graduated and a new group enters universities. Quality, therefore, is of great importance in educational systems. Effective factors in learning and educational achievement have always received lots of attention. Psychologists and education experts have been trying to identify variables to improve academic achievement. Learning is dependent on cognitive and emotional processes. Individuals' differences in learning are not only rooted in intellectual differences, they are also reliant on beliefs, judgments, thoughts, emotional trends, attitudes, values, and experience from past. Some of the most important variables include self-efficacy, critical thinking, and thinking styles [1].

Thinking is a mental process in which people manipulate and transfer the stored-in-mind information. It includes many mental and knowledge processes such as conceptualization, reasoning, critical thinking, decision making, creative thinking, classification, comparing, generalization, synthesis, and problem solving [2]. Morgan et al. define thinking as re-arranging or cognitively changing the obtained information from environment and symbols stored in long-term memory.

Sternberg's definition of thinking styles is very analogous to that of learning styles. He states that thinking style is not ability, but it is located between the character and capacities. In fact, it is how an individual apply their abilities. People may be similar in their abilities, but different in their thinking styles [3]. According to Stenberg way of thinking is the individual's preferred thinking style [4]. Sternberg classified individuals according to their ways of thinking into thirteen ways. He distributed it into five main categories. His distribution in terms of function is as follows:

- 1- Legislative style [creative]: They prefer the problems which require them to devise, design, and giving commands. In other words, they create their own laws.
- 2- Executive style [accomplishing]: Individuals with executive way of thinking prefer to accomplish commands and instructions. They, therefore, like to be guided by others. They would rather deal with administrative jobs and restricted laws.
- 3- Judicial style: The advocates of this style care about judgment and assessment of things. They prefer problems that allow them to analyze and evaluate the attitudes and affairs [5].

Creativity is one of the effective variables in the process of learning. It is mingle with emotional and cognitive variables [6]. Sternberg states that creativity is not a mono-dimensional concept. He believes that multi-dimensional emotional and cognitive capacities are the factors creating creativity. Sternberg defines creativity as thinking about problems in an exceptional way to achieve a unique solution. He believes that thinking style, knowledge, character, and environment influence creativity [7]. Related studies show that cognitive factors such as thinking style are influential in creativity, though it is not clear which way of thinking is negatively or positively related to creativity [8].

Before we provide a definition of critical thinking, note that critical here means shrewdly or intelligently, but not criticizing or fault-finding. Critical thinking is variously defines in literature:

- Reasonable, reflective thinking focused on deciding what to believe or do;
- Rational, disciplined analysis of problems, evidence, and solutions to evaluate decisions;
- The process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information to reach an answer or conclusion.

Understanding, analyzing, and interpreting problems, identifying questions, using logic [analogy, deduction, and induction], making rational conclusion on the basis of existing data, differentiate between facts and beliefs, making decision in different situation, identifying stereotypes, values and beliefs, raising questions and providing answers [10, 11, 12].

According to Woolfolk, when in an advertisement it is said that 99% of dentists recommend toothpaste you should ask yourself: Which dentists have been asked about the toothpaste? How have they been selected? The company that produces the toothpaste has carried out the survey? If the answer to the latest question is yes, you should doubt the results might have been manipulated in the favor of the producing company. As another example, a person with critical thinking note that when clothing are presented by a model, the designer has benefited the model's beauty which enhances the real quality of the presented clothing [13, 14]. California Critical Thinking Skills Test [CCTST] is the premier critical thinking skills test in the world today. Here is a question from the test:

Consider a case in which a social worker complainingly states that "children in group 'B' cannot be considered equal to those in group 'A' in relation to intellectual capacities, because they are from disunited families with poor living condition and criminal records. If it was true, is the social worker's reasoning correct or incorrect? Why?